REMARKS

This responds to the Office Action mailed on May 26, 2006, and the references cited therewith.

Claims 1-2, 10 and 13-15 are amended, claims 19-28 are withdrawn and claims 29-30 are added; as a result, claims 1-18 and 29-30 are now pending in this application.

Affirmation of Election

Restriction to one of the following claims was required:

I. Claims 1-18, drawn to an electrochemical cell, classified in class 429, subclass 46.

II. Claims 19-28, drawn to a method of making an electrochemical cell, classified in class 429, subclass 13.

As provisionally elected by Applicant's former representative, Wendy Buskop, on May 19, 2006, Applicant elects to prosecute the invention of Group I, claims 1-18.

The claims of the non-elected invention, claims 19-28, have been withdrawn.

Claim Objections

Claim 10 was objected to because the misspelling of the word "acrylonitrile". Claim 10 has been amended.

§112 Rejection of the Claims

Claims 14 and 15 were rejected under 35 U.S.C. § 112, for insufficient antecedent basis for the limitation "substrate" in the electrochemical cell. Claims 14 and 15 have been amended.

Claim Additions and Corrections

Claims 1 and 13 have been amended to correct typographical errors. Claim 2 has been amended for clarity and support for such amendment can be found at paragraph [0027] of the specification.

Claims 29 and 30 have been added. Such additions are supported throughout the specification, including at paragraph [0033].

§103 Rejection of the Claims

Claims 1-2, 4-6, and 13-14 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Polak et al. (US 4,797,185) in view of Linder et al. (US 5,599,506).

Claim 3 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Polak et al. (US 4,797,185) in view of Linder et al. (US 5,599,506) as applied to claims 1-2, 4-6, and 13-14 above and further in view of Fleischer et al (US 5,741,611).

Claim 7 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Polak et al. (US 4,797,185) in view of Linder et al. (US 5,599,506) as applied to claims 1-2, 4-6, and 13-14 above and further in view of Milliken et al. (US 6,399,233).

Claims 8-10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Polak et al. (US 4,797,185) in view of Linder et al. (US 5,599,506) as applied to claims 1-2, 4-6 and 13-14 above and further in view of Nam et al (US 2003/0219640).

Claims 11-12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Polak et al. (US 4,797,185) in view of Linder et al. (US 5,599,506) as applied to claims 1-2, 4-6, and 13-14 above and further in view of Puffer et al. (US 3,403,054).

Claims 15 and 16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Polak et al. (US 4,797,185) in view of Linder et al. (US 5,599,506) as applied to claims 1-2, 4-6 and 13-14 above and further in view of Mayer et al. (US 6,332,990).

Claims 17 and 18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Polak et al. (US 4,797,185) in view of Linder et al. (US 5,599,506) as applied to claims 1-2, 4-6 and 13-14 above, and further in view of Jones et al. (US 5,998,054).

Applicant respectfully submits that the Examiner did not make a *prima facie* case of obviousness for the following reasons:

(1) the cited references fail to teach or suggest all of the elements of applicant's claimed invention; and

(2) the cited references teach away from applicant's claimed invention.

Cited References Fail to Teach or Suggest All of the Elements

The reference must teach or suggest all the claim elements. M.P.E.P. § 2142 (citing *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed.Cir. 1991)).

Contrary to the Examiner's assertion, the Polak reference (US 4,797,185) does not teach a fuel cell comprising "a curable liquid electrolyte" as stated in claim 1. The electrolyte in Polak is not prepared by a process involving curing, nor is it introduced between the electrodes of a fuel cell in the form of a liquid. Furthermore, the electrolyte in Polak does not comprise a protonic polymer having a polymeric backbone with side chains containing acidic groups for conducting protons in an electrochemical cell, and a first vinyl monomer comprising a -COOH-group, as recited in the present claim 1.

The electrolyte membrane in Polak is a blend or admixture of two constituents, namely:

(a) an inorganic acid (not a protonic polymer having a polymer backbone); and

(b) an organic polymer.

In Polak, these two components are merely mixed together in a solvent, cast as a thin film, and then the solvent is evaporated to leave a solid membrane which can then be incorporated between two electrodes in a fuel cell. In polymer chemistry, "curing" generally refers to the setting, toughening or hardening of a polymer material by cross-linking of polymer chains, typically brought about by chemical additives, ultraviolet radiation, electron beam or heat. Curing is not merely the evaporation of a solvent.

In claim 1 of the present application, at least three components are brought together so that polymerization and cross-linking reactions occur to produce a membrane in situ (between the electrodes of an electrochemical cell). The components are all organic, and two of them are vinyl monomers. No polymerization or cross-linking reactions occur in the preparation of the Polak membrane, and no vinyl monomers (indeed no monomers at all) are involved.

Cited References Teach Away From the Claimed Invention

A factor cutting against a finding of motivation to combine or modify the prior art is when the prior art teaches away from the claimed combination. A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path

the applicant took. *In re Gurley*, 27 F.3d 551, 31 USPQ 2d 1130, 1131 (Fed. Cir. 1994); *United States v. Adams*, 383 U.S. 39, 52, 148 USPQ 479, 484 (1966); *In re Sponnoble*, 405 F.2d 578, 587, 160 USPQ 237, 244 (C.C.P.A. 1969); *In re Caldwell*, 319 F.2d 254, 256, 138 USPQ 243, 245 (C.C.P.A. 1963).

Polak teaches away from the in situ preparation of the membrane electrolyte. It teaches the admixing of the inorganic acid and organic polymer in a suitable solvent, casting of a solution of the electrolyte onto a suitable surface, followed by solvent evaporation to leave a thin film membrane (see col. 6, lines 31-68). Once formed, the solid membrane is then interposed between a pair of electrodes. One of the other cited references, Fleischer (US 5,741,611), teaches a similar technique for membrane preparation (see col. 4 lines 7-18) including the step of "interposing a non-liquid proton conductor membrane in an electrical contact between an anode plate and a cathode plate". Thus, as well as involving a different membrane composition, this reference also teaches away from the in situ preparation of the membrane electrolyte by curing a liquid.

The Polak reference does not disclose the limitations of claim 1 of the present invention. Further, the Polak reference teaches away from the claimed invention. As all rejections are based on the Polak reference in combination with other references, there is no need at this time to discuss the deficiencies of the other cited references. Because the Examiner has failed to present a *prima facie* case of obviousness, it is respectfully requested that the claims be allowed.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 373-6920 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

By their Representatives,

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Date 8/28/06

By _____
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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: Mail Stop Amendment, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 28th day of August 2006 (Monday).

CANDIS BUENDING

Name

Signature